MANUAL

ON THE USE OF THE

STANDARD CLASSIFICATION OF CAUSES OF BLINDNESS

COMMITTEE ON STATISTICS OF THE BLIND

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STANDARD CLASSIFICATION OF CAUSES OF BLINDNESS

Prepared for the
Committee on Statistics of the Blind

by

C. Edith Kerby

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FOREWORD

This guide to the use of the Standard Classification of Causes of Blindness is issued by the Committee on Statistics of the Blind,[1] which has been responsible for the development of the classification. The primary purpose of the manual is to reduce to a minimum those variations in interpretation which, to the extent that they occur, must affect the comparability, and hence the usefulness, of data compiled by different persons.

To three important precautions the attention of all agencies undertaking studies of causes of blindness is particularly directed, since on each of them the value of the effort expended on the study will depend. While data can be compiled for any group of blind persons, the results will, for most purposes, have significance only if the number of cases included is reasonably large and is representative of the total blind population in the area covered by the study. It is not sufficient that the eye examinations be made by ophthalmologists; the ophthalmologist's examination and study of each case should be sufficient to determine the underlying cause (etiology) of the eye condition, if ascertainable, and his findings should be recorded in detail and in standardized form. Finally, the medical findings must be summarized from the eye records by someone thoroughly qualified to interpret the information and fully familiar with the rules for applying the standard classification.

The Committee will be glad to receive suggestions or to answer questions concerning the classification of causes of blindness herein described. It will appreciate receiving copies of studies in which the classification is used, as they become available. Correspondence concerning the classification may be addressed to Miss C. Edith Kerby, National Society for the Prevention of Blindness, 1790 Broadway, New York City.

[1] The Committee on Statistics of the Blind, jointly sponsored by the American Foundation for the Blind and the National Society for the Prevention of Blindness, was appointed in 1930 to study the problems of statistics of blindness and the blind and make recommendations for the improvement of such statistical data. See following page for list of Committee members.

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TABLE OF CONTENTS

PAGE

FOREWORD iii

PURPOSE OF THE STANDARD CLASSIFICATION 1

Development of the Standard Classification — Provisions for Revision of the Classification

EXPLANATION OF THE CLASSIFICATION 2

Code Numbers — Medical Terminology

USE OF THE CLASSIFICATION 3

Definition of Blindness — Blindness of Two Eyes from Different Causes — Classification by Primary Cause — Physician's Report on Eye Examination — Frequency of Cause of Blindness Tabulations — Cross-tabulation of Causes of Blindness — Geographical and Other Supplementary Tabulations — Editing the Eye Examination Records — Responsibility for Editing — Coding the Records

RULES FOR APPLYING THE CLASSIFICATION—

BY ETIOLOGY 7

Etiology Should Not be Coded Automatically — Etiology Unknown — Clues from Other Parts of Record — Hereditary Factors Need Special Scrutiny — Accidents Causing Blindness — Unsatisfactory Diagnoses

BY SITE AND TYPE OF AFFECTION 9

Multiple Diagnoses — Ignore Extrabulbar Affections — Clues from Other Parts of Record — Unsatisfactory Diagnoses

CLASSIFICATION OF CAUSES OF BLINDNESS 12

INDEX OF DIAGNOSTIC TERMS—

INDICATING ETIOLOGY 14

INDICATING SITE AND TYPE OF AFFECTION 17

SUPPLEMENTARY TABULATIONS 22

By Present Age — By Age at Onset of Blindness — By Degree of Vision Remaining — By Peripheral Vision — By Race and Color

PHYSICIAN'S REPORT ON EYE EXAMINATION—SAMPLE FORM 26

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PURPOSE OF THE STANDARD CLASSIFICATION

Adequate statistics on causes of blindness have not been available in the past, either in the United States or in foreign countries. Such studies as were made were rarely based on large numbers of blind persons, and differences in the plans of classification have prevented satisfactory comparison of data from different sources. Moreover, the classifications used did not provide for complete analysis of causes.

The most comprehensive cause of blindness statistics for this country, and those most frequently cited, have been compiled by the United States Bureau of the Census in connection with attempts to take censuses of the blind. However, these censuses of the blind were notably incomplete, and the cause data, when recorded, were based upon statements made by the blind persons themselves, rather than upon medical records. Recognition of the unreliability of such statements caused the Census Bureau to omit any provision for collecting cause of blindness data in connection with its attempt to enumerate blind persons in 1930.

Between 1920 and 1930, a few states—Missouri, Colorado, and Illinois—undertook to summarize the cause information available on the eye examination records of recipients of state aid for the blind. These records were prepared under the direction of ophthalmologists, so that the source of the data was authentic, but the figures resulting from the studies in these states could not be combined or compared, because of differences in the schemes of classification. Furthermore, in each of these studies, emphasis was placed upon the site and type of eye affection, rather than on the underlying cause. This choice was not made consistently, however, with the result that items indicating the underlying cause of the eye condition—the etiological factor—appeared among the items descriptive of the site and nature of the eye affection. This inconsistency seriously invalidated the statistics as a whole.

Development of the Standard Classification

Owing to the inadequacy of the existing data on causes of blindness, the Committee on Statistics of the Blind, shortly after its appointment, undertook to draft a plan of classification of causes which would meet two outstanding needs. The first purpose was to provide for the production of comparable data on causes of blindness, and the second to produce data which would give the etiological information needed in formulating prevention of blindness programs.

Over a period of nine years, the Committee has been experimenting in the development and the application of its proposed standard classification. The plan has now been tested through application in the classification of some 21,000 records of blind persons. As a result, it has undergone modification in various details, but without change in the basic plan.

In each stage of development of this scheme, the Committee was advised by medical authorities within and outside the Committee. Ophthalmologists serving most of the schools for the blind have co-operated by making their records available for classification in annual

tabulations of causes of blindness among children, which have been made by the Committee since 1933-1934. Within the past three years the scheme has been used in nine states, Indiana, Kansas, Louisiana, Maryland, Michigan, New Hampshire, Washington, West Virginia, and Wisconsin, for classification of causes of blindness among recipients of assistance to the blind, and the Social Security Board has now officially recommended the classification for this purpose.

Provisions for Revision of the Classification

Although the standard classification has had extensive trial use, it is expected that opportunity will be found for further improvement. The Committee, therefore, requests suggestions for modification. On the basis of such suggestions, needed changes can be made in the future.

In this connection, however, it is recommended that the classification should not be modified to suit particular purposes in individual studies, since this might wholly defeat the larger purpose of standardization, and make it impossible to combine or compare satisfactorily the results of different studies.

It may be found desirable at some points to make a more detailed analysis of the cause data than is provided for in the standard classification. Where this seems advisable, it should be done without destroying the comparability of the tabulation as a whole.

On the other hand, there will be frequent occasions for use of an abbreviated classification, as when emphasis is desired only on the more frequently occurring causes or conditions. This, for example, might be practical for county or city comparisons, where the number of cases is too small to justify presentation of cause data in much detail. Shorter lists of causes can readily be prepared from the standard classification, but such tabulations should be prepared for presentation after the detailed standard classification for a state or large area has been made, and as a summary of the detailed classification. The abbreviated tabulation should not be used as a substitute for the detailed basic tabulation, which should be made available for scientific purposes, even though it is not published.

EXPLANATION OF THE CLASSIFICATION

The standard classification of causes of blindness is shown on pages 12 to 13. As already indicated, the outstanding characteristic of this plan is that it requires twofold classification of causes. Each case must be classified with respect to both the *etiological factor* and the *site (topography) and nature of the eye affection* which has resulted in blindness.

In both classifications, individual causes have been placed in significant main divisions. A main objective has been to keep the classification sufficiently condensed to facilitate its use without loss of important detail. Provision has been made for future subdivisions within these larger groupings where they are found desirable.

Code Numbers

For convenience in tabulation, a code number has been assigned to each diagnostic item. For the etiological diagnoses, numbers under 100 are used, decimals being employed only when detailed subdivision is necessary. For the items by site and type of eye affection, numbers over 100 are assigned.

Medical Terminology

The medical terminology used in the standard classification will be found to conform to that commonly used by practicing ophthalmologists, in recording eye examinations of blind persons. The terms were selected after study of large numbers of actual eye records.

Experience with the classification seems to indicate that the simple terminology adopted tends to promote accuracy in the preparation of statistics, and it has the advantage of being readily translated into programs of public education.

When the *Standard Classified Nomenclature of Disease* became available, after the first drafts of the classification had been prepared, careful consideration was given to the possibility of selecting for use in the classification the items from the *Nomenclature* for conditions resulting in blindness. It was found, however, that only cases diagnosed when the eye lesion was active, could be described in the terminology of the *Nomenclature*. Moreover, the etiological classification of the *Nomenclature* is more complex than is necessary or desirable in a classification of causes of blindness which, if it is to attain its greatest usefulness, must be interpreted to the general public.

The briefer lists used in both parts of the Committee's classification make it possible to present the data in cross-classification and thus to emphasize the general systemic conditions or other etiological factors which may be responsible for each of the eye conditions, and vice versa.

USE OF THE CLASSIFICATION

Definition of Blindness

Since the aim is to produce comparable statistics, it is recommended that tabulations ordinarily be confined to cases coming within the following standard definition of economic blindness:

> Central visual acuity of 20/200 or less in the better eye, with correcting glasses; or central visual acuity of more than 20/200 if there is a field defect in which the peripheral field has contracted to such an extent that the widest diameter of visual field subtends an angular distance no greater than 20 degrees.[1]

This definition has the general approval of ophthalmologists, and has been recommended to the states by the Social Security Board as a basis for determining eligibility for assistance. Where the population studied does not coincide with the group described in this definition, differences in the definition used should be made entirely clear in the report of the study, in order that due allowance may be made in attempting comparisons or combinations of data.

The above definition does not include persons who are blind only in one eye, or those having visual handicaps of lesser degree. If statistics pertaining to these groups are desired, it is recommended that they be compiled and presented separately. If this distinction is not made, over-emphasis may be given to certain causes which seldom or never result in *economic blindness,* that is, loss of sight to such a degree that the individual is unable to engage in occupations for which eyesight is essential.

Blindness of Two Eyes from Different Causes

In most cases of blindness, the cause will be found to be the same for each eye. In the relatively small number of cases in which the causes for the two eyes are substantially different, it is recommended that only the cause affecting the second eye to become blind be included in the main tabulation. This procedure throws emphasis on the cause of the economic blindness of the individual.

It may be desired to accumulate data on persons with different causes of blindness in the two eyes, in which case the number of such cases should be recorded, and supple-

[1] See pages 23-24 for discussion of degrees of limitation of the field of vision.

mentary tabulation made of the cause of blindness in the first and second eye affected.

Classification by Primary Cause

In those cases in which it is recognized that more than one factor has contributed to blindness, it is desirable that the classification of individual cases included in the tabulation should be by the most important cause. The physician making the diagnosis should be requested to indicate clearly his judgment as to the primary eye lesion and its primary etiology.

If information regarding secondary causes is required, such cause data should be presented separately as a supplementary table.

Physician's Report on Eye Examination

Statistical use of eye examination records will be facilitated if the ophthalmologist's diagnosis is originally recorded in the detail required by the classification. The Physician's Report on Eye Examination developed by the Committee on Statistics of the Blind (*see* p. 26), or the corresponding form of the Social Security Board, may be used for this purpose. Any form developed for its own use by a state agency should include all of the following items, which are considered essential: separate recording of the age at onset of blindness for each eye; the eye condition which caused blindness; secondary affections of the eye, if present; the etiology; the measurement for each eye of central visual acuity; and, where there is loss of peripheral vision, the measurement of the field of vision. It is highly desirable that record forms include also items on prognosis and the ophthalmologist's recommendations for re-examination and corrective treatment, as well as basic social data such as date of birth, sex, and race.

It will be helpful if diagnoses are recorded in the terminology of the classification. It is recommended, therefore, that public or private agencies intending to use eye records from a particular group of ophthalmologists provide such ophthalmologists with copies of the classification and invite their co-operation in making records as complete and as convenient for tabulation as possible.

Although provision is made in each main division of the classification for including indefinite and unspecified items under "not specified" headings, the data as a whole will be of little value unless the proportion of these unsatisfactory items is relatively small. The examining ophthalmologist should be requested to record site and type of eye affection as definitely as possible, and to specify etiology whenever it can be determined. Some cases of undetermined causes must be expected, however, if diagnoses are conscientiously made, particularly when physicians are examining persons whose blindness has been of long duration. The desire to avoid "not specified" items should not lead to the encouragement of recording of hypothetical diagnoses.

Frequency of Cause of Blindness Tabulations

It is suggested that studies of causes be made annually, or less often if the changes due to turnover of cases or to changes in the diagnostic information available appear too slight to warrant new tabulations. Preferably, the tabulations should include the entire group of blind persons under care or on the register of the agency making the study, in order that they may represent as nearly as possible the situation at the date of the report.

Tabulations of new cases of blindness occurring in a year will be of special interest only when, and if, reporting of cases as they occur has been established. The count of new cases applying for service in any year would have no particular significance. They would not indicate the incidence of blindness from each cause during the interval covered by the report, since in any given case a period of years may

elapse between the time of onset of blindness and the date of application for service.

Cross-tabulation of Causes of Blindness

For scientific uses, the most satisfactory method of presenting data on causes is in a cross-tabulation correlating the etiological factors with the site and type of eye affection. For this purpose, the worksheet[1] developed by the Committee on Statistics of the Blind will prove useful (see illustration facing page 6). As previously mentioned, a complete cross-tabulation should constitute a part of any study of causes of blindness. For purposes of comparison and combination of data from several states only the complete classification will prove satisfactory, since in any abridged tabulation the failure to make specific mention of any cause cannot be assumed to imply the complete absence of that cause in the group studied.

Geographical and Other Supplementary Tabulations

Ordinarily, it will be found impracticable to present complete cause of blindness statistics for individual counties or cities, since the number of cases for small geographical areas will be too few to give significant data. Geographical analysis of the data for the more frequently occurring causes may, however, be useful, as when it is desired to locate the areas contributing to the high incidence of such causes, for example, as trachoma, syphilis, or industrial accidents, within a state in which there is no marked tendency among the blind to change their places of residence after blindness has occurred.

Experience has shown that it is desirable to tabulate such supplementary data about the group studied as sex, race, age, age at onset of blindness, and degree of vision. These facts are essential to a sound interpretation of the cause findings and are particularly useful when comparisons are to be drawn between states. Here, again, uniformity in the method of classification will prove most satisfactory and suggested groupings for use in presenting such supplementary data are shown on pages 22 to 25.

When only a selected group of blind persons is included in the study of causes of blindness, it will be of interest to present corresponding sex, race, and age data concerning the complete register of the blind in the state, if the figures for the registered group are available, and if the register is considered to be relatively complete and up-to-date.

Usually, it will not be feasible, or necessary, to correlate the detailed cause of blindness data with sex, age, or race. An unusually high or low incidence of certain causes, however, may be accounted for by the age, sex, or racial composition of the group studied. The effect of these factors should be tested by correlation with the data on causes of blindness. The significance of the facts thus disclosed will determine the detail to be reported.

Editing the Eye Examination Records

As is the case in compiling any statistics derived from case records supplied by many different examiners, it is important that the eye examination records be carefully edited before any attempt is made to tabulate. This is essential, in order to insure that the data reported are sufficiently complete and in proper form for tabulation, and that cases of a similar type will be found under the same classification in the figures from each group studied. Types of records which will require action on the part of the editor are:

Records which are incomplete.

Records on which the physician has ignored the individual items on the form and stated the facts in running comment.

[1] For sample copies or supplies of the worksheets, apply to the Committee's secretary, Miss Evelyn C. McKay, 15 West 16th Street, New York, N. Y.

Records on which one or more of the diagnostic items are obviously out of place.

Records involving two or more commonly associated eye conditions which are given different emphases by different examiners but which should be coded consistently. (See pp. 9-10).

Records on which other items or remarks on the record supplement or clarify the diagnostic items. (See pp. 7, 10-11).

Records on which the examiner lists two or more eye conditions as primary.

Records on which the examiner has given a description of the eye conditions but no summary diagnosis.

Records on which the diagnosis, the description of the appearance of the eyes, and the degree of vision are obviously not in agreement.

Records of cases diagnosed merely as cataract but in which there is evidence that the cataract may be secondary to other eye lesions not visible because of the cataract (e.g., many cases in which the individual lacks light projection are secondary cataracts).

It is extremely important that the preparatory work on the individual case record should not be delayed too long after the eye examination. If an effort is made to review each record for completeness and to edit and code it for statistical purposes at the time of its receipt from the examining physician, it will usually be possible to secure additional information needed, either by corresponding with the examining physician or by requesting an investigation of the history of the case.

Responsibility for Editing

If the research worker who is conducting the study is not himself an ophthalmologist, it is necessary that the services of a qualified ophthalmologist be provided for consultation concerning the study, particularly concerning the adequacy of the medical data used. Editing of the records should be done either by the person responsible for the study, or else by a specially trained assistant under his immediate supervision. Whoever takes part in the editing process must become thoroughly familiar both with ophthalmological terminology and with the fundamentals of the classification before editing is undertaken.

In the process of editing, all those records presenting any question concerning adequacy or correctness of the recorded diagnosis should be sorted out for examination by the advising ophthalmologist. He may complete or rearrange the information given on the record. Often this is a matter of interpreting the facts presented and can be done without consulting the examining physician. In certain cases, it may be desirable to delay final classification until further information on etiology is obtained from the examining physician, or from other reliable sources, such as the patients' previous physicians.

Coding the Records

The task of assigning code numbers should be done by the person who edits the records, as part of the editing process. Because of the variability of terminology which may be used in designating the same eye condition or causal disease, indexes of both etiological factors and terms descriptive of eye affection, have been prepared and are given on pages 14 to 21. These indexes give for each term included the code number for the corresponding category in the classification.

Since errors may be made in the assignment of code numbers, it is always desirable that the coding of causes for tabulation should be checked in a separate operation before beginning tabulation. It is preferable that the coding be checked by a person other than the one who originally assigned the code numbers.

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SAMPLE WORK SHEET

CAUSES OF BLINDNESS AMONG (Describe group) .....

| CAUSES OF BLINDNESS BY ETIOLOGY AND BY SITE AND TYPE OF AFFECTION | ALL CAUSES BY SITE (TOPOGRAPHY) AND TYPE OF AFFECTION | | EYEBALL, IN GENERAL | | |

RULES FOR APPLYING THE CLASSIFICATION BY ETIOLOGY

The etiological classification is determined by the disease or accident which is responsible for physiological or pathological changes in the eye—that is, by the cause underlying the eye condition. The ideal ophthalmological examination includes such supplementary tests, examinations, and study of the case history as are necessary to determine the etiology.

Etiology Should Not be Coded Automatically

Cases should not be classified automatically as resulting from the etiological condition which is assumed to be the most common cause of the given eye condition. For example, interstitial keratitis is not always caused by prenatal syphilis; nor is all ophthalmia neonatorum gonorrheal. Each case should be classified on the basis of specific information which has been determined to apply in the case of the given individual.

Etiology Unknown

Theoretically, the etiological factor should be determinable in every case of blindness. Actually, it may be difficult and sometimes impossible to establish the etiology in a particular case because of the gaps in present medical knowledge or the lack of adequate information concerning the history of the case.

Many cases in which the etiology is not given or is noted merely as unknown should properly be classified (at least for the present) as "unknown to science," 91.0. For example:

Myopia cases, unless specified as of "hereditary origin;"

Cataract (senile type), when no etiology is noted by the examiner;

Glaucoma, except congenital cases or those otherwise specified by the examiner;

Pemphigus, unless or until more definitely specified.

Other case records on which the etiological item is omitted or designated as "unknown" should be classified as:

"Undetermined by physician," 92.0, if there is some indication that the examiner has made an unsuccessful attempt to determine the etiology;

and

"Not specified," 99.0, if the record of the examination is obviously incomplete.

If the etiology can be only partially determined:

Use the indefinite category under the general grouping which is applicable, (e.g., "ophthalmia neonatorum, type not specified," 15.9; "multiple infectious diseases," 27.0; "infectious diseases, not specified," 29.0; injury in "non-occupational activities, not specified," 39.0).

A diagnosis of "probably (or possibly) due to" some etiological factor may be definitely classified only if it is the examiner's best judgment on the case and there is no evidence that etiology has been assigned automatically. (*See* above.)

Clues from Other Parts of Record

Clues contained in other items on the record or on other records may suggest the proper etiological classification of a case.

Illness in childhood, the nature of which is not noted, may be classified as "infectious diseases, not specified," 29.0, if the eye condition is of the inflammatory type; but is classified as "undetermined by physician," 92.0, if there is no clue to the type of disease.

Injuries to a small child should be classified by the activity involved. His use of household articles or mimicry of occupations is ordinarily "play or sport."

Cases in which the record indicates that blindness existed from birth should be classified as "prenatal origin, cause not specified," 89.0, unless there is evidence on the record indicating that the blindness is of "hereditary origin," 81.0 to 82.0; the result of injury during "birth processes," 31.0; or caused by an infection at birth, "ophthalmia neonatorum," 15.1 to 15.9.

A positive Wassermann, or history of treatment for syphilis, when noted on the record of a case, should suggest investigation to determine whether syphilis is the cause of blindness. Occasionally, parents or siblings of the individual are known or suspected to have syphilis. In such instances also, the possibility of syphilis as the causative factor should be considered.

A case involving sympathetic ophthalmitis in the second eye following a wound of the first eye, is attributed to the injury in the first eye and should be so classified.

If an eye already blind (as from structural anomalies) is later injured, the original cause should be coded.

Through a desire to keep diagnoses of venereal disease strictly confidential, certain examiners may use indefinite terms such as "specific" or "systemic" to imply syphilis.

Hereditary Factors Need Special Scrutiny

If the physician's report shows an eye defect which is recognized as inheritable, the case should not be finally classified until information concerning the individual is supplemented by careful investigation of family history. Depending upon the conclusiveness of the evidence, such cases may be classified as:

"Hereditary origin established," 81.0, provided it is demonstrated that the same inheritable defect has appeared in other members of the family in accordance with the mode of transmission expected for the defect in question.

"Hereditary origin presumed," 82.0, if the defect is one that is recognized as inheritable, but evidence from the family history cannot be produced to show *conclusively* whether or not the same defect has appeared in other members of the family, in accordance with the mode of transmission expected for the particular defect.

Evidence that the same inheritable defect has existed in some previous generation is needed for establishing hereditary origin. However, this does not necessarily mean direct transmission from parent to offspring, which occurs only in defects which are inherited as a *dominant* characteristic. A *recessive* defect may skip a generation or remain latent until reinforced by marriage with another having the same recessive defect. Or a recessive defect may be *sex-linked,* that is, it may be transmitted from an affected male through an unaffected female in the next generation to an affected male in the third generation. Actually, a given type of defect may have different modes of transmission in different families.[1]

Remember that the examining ophthalmologist may not have known of other cases in the family. Check cases of similar surnames and addresses against each other and investigate for blood relationships.

Some blindness occurring in more than one member of the same family may be due to the same cause, but not heredity. For example, blindness at birth may be due to "prenatal syphilis," 19.1, "nutritional deficiency," 77.0, or to injury during the "birth processes," 31.0. Similarly, cases occurring in two or more related adults may be due to infection or faults of nutrition. Avoid classification of such cases under the hereditary items.

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[1] The following list suggests the most commonly accepted modes of transmission for certain inheritable eye defects: albinism, sex-linked recessive; anophthalmos, dominant or recessive; megalophthalmos, recessive; microphthalmos, dominant or recessive; aniridia, dominant; coloboma, generally dominant; cataract (congenital), generally dominant; dislocated lens, dominant or recessive; retinitis pigmentosa, generally recessive; Leber's disease, sex-linked recessive; congenital optic atrophy, generally recessive.

Accidents Causing Blindness

In case of traumatic causes, it is important that the record show both where the accident occurred and under what circumstances. The classification distinguishes first between non-occupational and occupational injuries.

Occupational injuries include all those occurring in the pursuit of an occupation, whether compensation is in the form of wage, salary, or other profits, but exclude avocational activities. It is recommended that where feasible, occupational injuries be further classified by industry and type of occupation. (*See* footnote p. 12).

Non-occupational injuries should be subdivided to show the nature of the activity or situation leading to the accident. The specific categories here recognized are: medical or surgical injuries at time of birth; other medical or surgical injuries; play injuries; household injuries resulting either from work of a member of the family (but not an employed person) about the house or from other activities, except play, in and about the home; and injuries involving vehicles of transportation. For example:

If a child was knocked down by an auto while playing in the streets, it is a traffic accident, 35.0.

If a child had a fall while playing in the streets, it is an accident in play, 33.0.

If a man was injured while doing carpentering around his own home, it is a household accident, 34.0.

If a workman employed to do carpentering in a home was injured, it is an occupational accident, 40.0.

If a man was injured at his place of work while engaging in horse-play with fellow-workmen, it is a play accident, 33.0.

It is recommended that non-occupational injuries be further classified by the nature of the instrument causing the injury. (*See* footnote page 12).

Unsatisfactory Diagnoses

Some systemic diseases which result in blindness are unclassifiable unless the diagnosis is complete. For example:

Encephalitis should be assigned to the primary etiological factor to which it is due (as lethargic or epidemic, 28.0; due to poisoning, 51.0 to 59.0). If this cannot be determined, it must be classified as a disease of the central nervous system, 75.0.

Meningitis should also be assigned to the primary etiological factor to which it is due (as epidemic or meningococcal, 14.0, syphilitic, 19.2, traumatic, 31.0 to 49.0). If this cannot be determined it must be classified as a disease of the central nervous system, 75.0.

Some terms frequently used in diagnosis suggest the time of occurrence not the cause, for example: "congenital," "senile."

RULES FOR APPLYING THE CLASSIFICATION BY SITE AND TYPE OF AFFECTION

For this grouping, each case should be classified according to the location in the eye (topography) and the nature of the lesion immediately responsible for the failure of sight (e.g., iritis, detached retina).

Multiple Diagnoses

In classifying cases having lesions in more than one part of the eye, careful consideration should be given to the following points:

If, in the opinion of the examining ophthalmologist or consulting ophthalmologist, one lesion is secondary to the other, the case should be classified according to the primary lesion (e.g., glaucoma may be secondary to cataract, or vice versa).

The classification includes items for the more frequent combinations (e.g., iridocyclitis).

In cases having a number of concurrent lesions, any one of which might result in blindness, select one of the general items in the classification which will cover all lesions (e.g., the case of a person born with several structural anomalies should be classified under "multiple structural anomalies," 147).

In some cases involving multiple diagnoses, especially those in which the sequence of events is not indicated definitely by the examiner, it is necessary to classify in accordance with logical assumptions, for example:

High myopia and detached retina should be classified as "myopia," 121, on the assumption that myopia caused the stretching which ultimately resulted in detachment.

On the other hand,

Detached retina associated with simple myopia of low degree should be classified as "detached retina," 640, since the myopia per se would appear to be insufficient to account for a detachment.

In certain cases of associated eye conditions it is necessary to throw the emphasis on one factor, for the sake of consistency and comparability. For example:

Myopia resulting in blindness is known to be associated with certain pathological conditions, but in classifying preference is given to the "myopia," 121.

Refractive errors, other than myopia, should not be used in the coding if another eye affection is mentioned, because they are not commonly causes of blindness.

Uveitis, iridocyclitis, or any other term implying inflammation of the second eye following injury to the first, should be classified as "sympathetic ophthalmitis," 440, unless the record indicates a different etiology for the second eye.

Ignore Extrabulbar Affections

Eye diseases which result in blindness only if the eyeball itself is affected should be classified according to the part of the eyeball affected. Ignore the extrabulbar affection. For example:

Trachoma starts in the palpebral conjunctiva causing granular or follicular conjunctivitis, but blindness is the result of bulbar lesions such as ulcerative keratitis, pannus, etc.

Ophthalmia neonatorum which has caused blindness should be classified with respect to site and type of affection as ulcerative keratitis, panophthalmitis, etc., and not as a conjunctival lesion.

Pemphigus which has caused blindness should be classified with respect to site and type of affection as ulcerative keratitis, pannus, panophthalmitis, etc., and not as a conjunctival lesion.

In this connection it should be noted that the grouping, "conjunctiva, muscles and other ocular adnexa," 200-299, although included in the classification, is reserved for classification of persons who are not actually blind, because blindness does not result from such lesions alone, but only after the eyeball itself is affected.

Clues from Other Parts of Record

Clues to proper classification by site and type of affection are sometimes found in other items besides the eye condition responsible for blindness, for example:

Glaucoma designated as of prenatal origin or occurring in early childhood, as shown by the etiology or age at onset of blindness, should be classified as "megalophthalmos," 143, rather than "hypertension," unless the examining ophthalmologist reports the case as definitely not of the structural anomaly type.

The fact that an individual lacks ability to project light may lead to suspicion that his cataracts are secondary to some other eye lesion.

Keratitis in an ophthalmia neonatorum case is coded as "ulcerative keratitis," 330.

When two eye lesions are given and one appears on the etiology line, it may be assumed that the examiner considered the eye condition

which was wrongly entered as the etiological factor to be the one primarily responsible for blindness, and it should be so coded.

The word "secondary" is sometimes used by an examiner in recording an eye condition of known etiology (e.g., "secondary" optic nerve atrophy due to brain tumor). The fact that no other eye condition is specified in the diagnosis as "primary" suggests that the lesion mentioned should be coded as the eye condition responsible for blindness.

Another confusing use of the word "secondary" occurs in the term "secondary cataract." This term is sometimes used to indicate that the remnants of a partially removed cataractous lens are present, in which instance the eye condition to be coded is "cataract," 510.

Unsatisfactory Diagnoses

Occasionally the diagnosis will have been stated in terminology which is unacceptable, either because the term itself is indefinite or because blindness from the eye condition is unusual or improbable. These cases warrant further investigation before acceptance.

Terms which describe merely the sequellae of eye diseases should be avoided. For example:

Optic nerve atrophy (like heart failure) may be the final stage of many different conditions. Cases in which the optic atrophy is not primary, but apparently followed another eye lesion of sufficient importance to cause blindness, should be classified by the other lesion.

The term "enucleation" by itself is inadequate as a diagnosis in that it gives no clue to the type of eye lesion that preceded it. If it is not possible to discover the actual cause of blindness, the case must be classified as "affection of the eyeball, not specified," 190.

Corneal opacities are not classifiable as such. If an eye disease such as corneal ulcers or interstitial keratitis has caused the opacity, this cause should be classified. If, however, it is not possible to tell from the etiology or the history of the eye condition whether the opacity is caused by such disease or by an injury, the case must be classified as "affection of the cornea, not specified," 390.

Certain terms suggest merely the symptoms or complications which occur in association with eye conditions causing blindness. For example:

Optic nystagmus is usually associated with imperfect vision. It is preferable, therefore, to classify by the eye condition primarily responsible for the low vision, if this is known (e.g., congenital cataracts). However, if the case is one in which there is no visible eye defect or lesion, it should be classified as "amblyopia, undefined," 910.

Strabismus (squint, convergent or divergent) in early life may result in blindness or low vision, but this would affect one eye only. When it occurs in association with another eye condition that may cause blindness, the latter should be assumed to be primarily responsible for blindness of the individual.

Long established habit leads some examiners to assume that the entire diagnosis is implied in certain etiological terms, and therefore, to omit recording of the site and type of eye affection. Such records should be returned to the examiner for completion. Examples illustrating this difficulty are:

"Ophthalmia neonatorum" does not suggest whether the infection stopped with corneal ulceration, or went on to panophthalmitis, phthisis bulbi, etc.

"Trachoma" does not necessarily imply pannus and/or ulceration of the cornea.

"Trauma" gives no hint of the part of eye injured or the nature of the degenerative changes.

CLASSIFICATION OF CAUSES OF BLINDNESS[1]

BY ETIOLOGY

10-29 Infectious Diseases

- 11.0 Diphtheria
- 12.0 Gonorrhea, excluding gonorrheal ophthalmia neonatorum
- 13.0 Measles
- 14.0 Meningitis
- 15 Ophthalmia neonatorum
  - 15.1 Gonorrheal
  - 15.8 Other types, specified
  - 15.9 Ophthalmia neonatorum, type not specified
- 16.0 Scarlet fever
- 17 Septicemia
  - 17.1 Acute
  - 17.2 Chronic (including focal sepsis, etc.)
  - 17.9 Nature not specified
- 18.0 Smallpox
- 19 Syphilis
  - 19.1 Prenatal
  - 19.2 Acquired after birth
  - 19.9 Origin not specified
- 20.0 Trachoma
- 21.0 Tuberculosis
- 22.0 Typhoid fever
- 27.0 Multiple infectious diseases
- 28.0 Other infectious diseases, specified
- 29.0 Infectious diseases, not specified

30-49 Trauma (including chemical burns)

- 30–39 Non-occupational activities[2]
  - 31.0 Birth processes
  - 32.0 Medical and surgical procedures
  - 33.0 Play or sport
  - 34.0 Household activities
  - 35.0 Traffic and transportation
  - 38.0 Other non-occupational activities, specified
  - 39.0 Non-occupational activities, not specified
- 40.0 Occupational activities[3]
- 49.0 Activities, not specified

50-59 Poisonings[4]

- 51.0 Non-occupational activities
- 52.0 Occupational activities
- 59.0 Activities, not specified

60-69 Neoplasms

- 69.0 Neoplasms, all types

70-79 General Diseases (not elsewhere classified)

- 71.0 Anemia and other blood diseases
- 72.0 Diabetes
- 73.0 Nephritis and other kidney diseases
- 74.0 Vascular diseases (including arteriosclerosis and other cerebral-vascular lesions)
- 75.0 Diseases of the central nervous system (including multiple sclerosis)
- 76.0 Diseases of pregnancy and childbirth
- 77.0 Nutritional deficiency
- 78.0 Other general diseases, specified
- 79.0 General diseases, not specified

80-89 Prenatal Origin (not elsewhere classified)

- 81.0 Hereditary origin, established
- 82.0 Hereditary origin, presumed
- 89.0 Prenatal origin, cause not specified

99-99 Etiology Undetermined or Not Specified

- 91.0 Unknown to science
- 92.0 Undetermined by physician
- 99.0 Not specified

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[1] In general the classification is suitable also for use in group studies of individuals who are not blind, but have seriously defective vision.

[2] If information concerning the object or instrument causing the injury is available, it is recommended that accidents in these groups be further subdivided as follows: 1, fireworks; 2, firearms (including airguns); 3, dynamite; 4, other explosives; 5, sharp or pointed objects; 6, blows and falls; 7, foreign body; 8, other specified; 9, not specified.

[3] If information is available, it is recommended that these groups be further subdivided to show the nature of industry and process.

[4] If information is available, it is recommended that this group be further subdivided by the type of poison (as lead, alcohol, etc).

CLASSIFICATION OF CAUSES OF BLINDNESS

BY SITE (TOPOGRAPHY) AND TYPE OF AFFECTION

100-199 EYEBALL, IN GENERAL

- 110 Hypertension (glaucoma)

120–129 Refractive errors

- 121 Myopia (including myopic astigmatism)
- 128 Other refractive errors, specified
- 129 Refractive errors, not specified

- 130 Panophthalmitis and acute endophthalmitis

140–149 Structural anomalies

- 141 Albinism
- 142 Anophthalmos (excluding surgical)
- 143 Megalophthalmos (buphthalmos, infantile glaucoma, hydrophthalmos)
- 144 Microphthalmos
- 145 Aniridia
- 146 Coloboma, any part (excluding surgical)
- 147 Multiple structural anomalies
- 148 Other structural anomalies, specified
- 149 Structural anomalies, not specified

150–159 Degenerative changes

- 151 Disorganized eyeball (atrophic globe, phthisis bulbi)
- 158 Other degenerative changes, specified
- 159 Degenerative changes, not specified

- 180 Other affections of the eyeball, specified
- 190 Affections of the eyeball, not specified

200-299 CONJUNCTIVA, MUSCLES, AND OTHER OCULAR ADNEXA[1]

300-399 CORNEA

- 310 Keratitis, interstitial
- 320 Keratitis (keratoconjunctivitis), phlyctenular
- 330 Keratitis, ulcerative
- 340 Keratitis, not specified
- 350 Pannus
- 360 Ulceration and vascularization
- 380 Other affections of the cornea, specified
- 390 Affections of the cornea, not specified

400-499 IRIS AND CILIARY BODY

- 410 Iritis
- 420 Iridocyclitis and uveitis
- 430 Kerato-iritis
- 440 Sympathetic ophthalmitis
- 480 Other affections of the iris and ciliary body, specified
- 490 Affections of the iris and ciliary body, not specified

500-599 CRYSTALLINE LENS

- 510 Cataract
- 520 Dislocated lens
- 580 Other affections of the lens, specified
- 590 Affections of the lens, not specified

600-699 CHOROID AND RETINA

- 610 Choroiditis
- 620 Retinitis
- 630 Chorioretinitis
- 640 Detached retina
- 650 Retinal hemorrhage
- 660 Retinal degeneration (including retinitis pigmentosa)
- 670 Arteriosclerotic disease of choroid and retina
- 680 Other affections of the choroid and retina, specified
- 690 Affections of the choroid and retina, not specified

700-799 OPTIC NERVE, VISUAL PATHWAY, AND CORTICAL VISUAL CENTERS

- 710 Optic nerve atrophy
- 720 Optic neuritis (papillitis)
- 730 Papilledema (choked disc)
- 740 Neuroretinitis
- 750 Retrobulbar and intra-cranial lesions
- 780 Other affections of the optic nerve, specified
- 790 Affections of the optic nerve, not specified

800 VITREOUS (excluding sequellae of known ocular disease)

990-999 MISCELLANEOUS AND ILL-DEFINED

- 910 Amblyopia, undefined
- 980 Other miscellaneous and ill-defined lesions, specified
- 990 Lesions, not specified

[1] This item to be used only when classification is used in group studies of individuals who are not blind. If subdivision is desired, group by part of eye affected.

INDEX OF DIAGNOSTIC TERMS INDICATING ETIOLOGY

CODE NO.

Accident, *see* Trauma ..... —
Air rifle, injury from 33.2
Albuminuria
  in pregnancy 76.0
  other 73.0
Alcohol, *see* Poisoning ..... —
Anemia 71.0
Arrested development* ..... 81.0 to 89.0
Arteriosclerosis 74.0
  arteriosclerotic changes in retina or choroid 74.0
Auto-toxemia (auto-intoxication)
  focal sepsis (infection) 17.2
  non-infectious diseases or disorders (classify by type of disease, if known) ..... 71.0 to 79.0
  not specified 92.0

"BB" gun, injury from 33.2
Blennorrhea
  at birth 15.1
  other 12.0
Brain
  abscess of (classify by type of infection if known; *see p. 7*) ... 11.0 to 29.0
  fever*, *see* Meningitis ..... —
  hemorrhage, cause not specified 74.0
  injury at birth 31.0
  other injury of (classify by type of activity) ..... 32.0 to 49.0
  tumor 69.0
Bright's disease
  in pregnancy 76.0
  other 73.0
Burns, including chemical (classify by type of activity) ..... 31.0 to 49.0

Cancer, any type 69.0
Carcinoma 69.0

CODE NO.

Central nervous system, non-infectious disease of 75.0
Cerebral-vascular lesions 74.0
Chemicals
  burns from (classify by type of activity) ..... 31.0 to 49.0
  poisoning from (classify by type of activity) ..... 51.0 to 59.0
Childbirth, diseases or disorders affecting mother 76.0
Congenital* (classify by cause, if known; *see pp. 8-9*) ..... 81.0 to 89.0
Consanguinity ..... 81.0 or 82.0

Dental disease 17.2
Diabetes 72.0
Dietary deficiency 77.0
Dinitrophenol poisoning ..... 51.0 to 59.0
Diphtheria 11.0
Drugs, *see* Chemicals ..... —

Encephalitis* (classify by primary etiological factor if known; *see p. 9*)
  epidemic 28.0
  lethargic 28.0
  type not specified* 75.0
Endocrine imbalance 78.0
Erysipelas 28.0

Focal infection (focal sepsis) 17.2

Glioma 69.0
Glandular deficiency 78.0
Gonorrheal infection
  at birth (*see p. 8*) 15.1
  other 12.0

Hemorrhage, brain or intra-cranial
  at birth 31.0
  following injury, *see* Trauma .. 31.0 to 49.0

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
brain (cause not specified)	74.0
other	75.0
Hereditary origin	
established	81.0
presumed	82.0
High blood pressure	74.0
Hydrocephalus	75.0
Hypertension, constitutional	74.0
Idiopathic* (*see p. 7*)	91.0
Inclusion blennorrhea at birth	15.8
Infantile paralysis	28.0
Infections or infectious diseases (classify by type of infection, unless infection followed injury)	
following injury, *see* Trauma	31.0 to 49.0
multiple infectious diseases	27.0
organism or disease specified but not listed in classification	28.0
organism or disease not specified	29.0
Influenza	28.0
Injury, *see* Trauma	—
Kidney disease	
in pregnancy	76.0
other	73.0
Lead poisoning	
occupational	52.0
other	51.0 or 59.0
Leber's disease	81.0 or 82.0
Leprosy	28.0
Leukemia	71.0
Lues	19.1 to 19.9
Malformation* (*see pp. 7-8*)	81.0 to 89.0
Malnutrition	77.0
Mastoiditis	17.1 or 17.2
Measles	13.0
Medical treatment, *see* Trauma	—
Meningitis*, cerebral, spinal or both (classify by primary etiological factor, if known; *see p. 9*)	
epidemic	14.0
infectious	14.0 or 29.0
meningococcic	14.0
type not specified	75.0
Metastatic infection	17.2
Multiple sclerosis	75.0
Neisserian infection	
at birth	15.1
other	12.0
Neoplasms, any type	69.0
Nephritis	
in pregnancy	76.0
other	73.0
Non-infectious systemic diseases	
specified but not listed in classification	78.0
not specified	79.0
Nutritional deficiency	77.0
Occupational disease (classify by type of disease)	—
Operation, surgical, *see* Trauma	—
Ophthalmia neonatorum	
gonorrheal	15.1
other types specified	15.8
type not specified	15.9
Oxycephaly	81.0 to 89.0
Paresis	19.1 to 19.9
Pemphigus (*see p. 7*)	91.0
Pertussis	28.0
Play injury, *see* Trauma	—
Pneumonia (pneumococcic infection)	
at birth	15.8
other	28.0
Poisonings in	
non-occupational activities	51.0
occupational activities	52.0
activities not specified	59.0
Poliomyelitis	28.0
Pregnancy, diseases or disorders affecting mother	76.0
Prenatal origin, cause not specified*	89.0
Purpura	71.0
Purulent infection of eye, organism not specified (*see p. 7*)	29.0

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Rheumatism* (*see p. 9*)	79.0
Rheumatic fever	29.0
Sarcoma	69.0
Scarlet fever (scarletina)	16.0
Senility* (*see p. 9*)	91.0
Septicemia	
acute	17.1
chronic	17.2
nature not specified	17.9
Sinusitis	17.2
Smallpox	18.0
"Specific" (*see p. 8*)	19.1 to 19.9
Staphylococcic infection	
at birth	15.8
other	28.0
Streptococcic infection	
at birth	15.8
other	28.0
Suppurative eye condition, cause not specified (*see p. 7*)	29.0
Surgical treatment, *see* Trauma	—
Syphilis	
acquired after birth	19.2
prenatal	19.1
origin not specified	19.9
Systemic disease	
specified but not listed in classification	78.0
not specified	79.0
when syphilis is implied (*see p. 8*)	19.1 to 19.9
Tabes	19.1 to 19.9
Teeth	17.2
Tobacco, *see* Poisoning	—
Toxemia in	
focal infection	17.2
pregnancy	76.0
other disease (classify by type of disease)	—
Toxic amblyopia (toxic poisoning; *see p. 7*)	51.0 to 59.0
Trachoma	20.0

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Trauma, non-occupational activities (*see pp. 9, 12*)	
activity specified but not listed in classification	38.–
activity not specified	39.–
at birth, from any cause	31.0
brain	
at birth	31.0
other (classify by type of activity)	32.0 to 49.0
game, any type, unless engaged in professionally	33.–
horseplay	33.–
household chores, repairs, other home activities	34.–
medical treatment	
malpractice	32.0
quackery	32.0
unexpected harmful results of medical treatment for other parts of body	32.0
operations or surgical treatment	
post-operative complications (classify by original cause)	—
unsuccessful operation (classify by original cause)	—
unexpected harmful results of surgery in other parts of body	32.0
unwarranted operative interference	32.0
pedestrian travel	35.–
play	33.–
pranks	33.–
recreation, any type	33.–
sport, any type, unless engaged in professionally	33.–
transportation, any type	35.–
vehicle	35.–
war	
combatant	40.0
non-combatant	38.0
Trauma, occupational activities (*see pp. 9, 12*)	40.0
Trauma, activities not specified	49.0
Tuberculosis (tubercular infection)	21.0
Tumor, any type	69.0

	CODE NO.
Typhoid fever	22.0
Unknown etiology (*see p. 7*)	
born blind (*see p. 8*)	89.0
cataract, senile type (*see p. 7*)	91.0
glaucoma, non-congenital type (*see p. 7*)	91.0
myopia (*see p. 7*)	91.0
undetermined by physician (*see p. 7*)	92.0
unknown to science	91.0
not specified (*see p. 7*)	92.0 or 99.0
Uremia	
in pregnancy	76.0
other	73.0
Variola	18.0
Vitamin deficiency	77.0
War injury	
combatant	40.0
non-combatant	38.0
Whooping cough	28.0

INDEX OF DIAGNOSTIC TERMS INDICATING SITE AND TYPE OF AFFECTION

	CODE NO.
Abrasion of	
cornea	380
eyeball	180
Albinism	141
Amaurosis* (*see p. 11*)	910
Amblyopia* (*see p. 11*)	
ex anopsia (*see p. 11*)	—
undefined	910
Aniridia	145
Anophthalmos (*see p. 11*)	
at birth	142
surgical* (classify by primary eye lesion, if known; *see p. 11*)	190
Aphakia (*see p. 11*)	510
Astigmatism	
hyperopic	128
mixed	128
myopic	121
not specified*	129
Atrophy of	
choroid or choroidal atrophy (of nerve)	610
globe (eyeball)* (*see p. 11*)	151
optic nerve primary (*see p. 11*)	710
retina or retinal atrophy (of nerve)	620
retina and choroid	630
Brain lesion	750
Buphthalmos	143
Burns of (including chemical)	
cornea	380
eyeball	180
Cataract	
after* (*see p. 11*)	510
complicata* (*see p. 4*)	—
post operative	510
primary	510
secondary* (*see p. 4*)	—
"secondary"* (*see p. 11*)	510
Cerebral lesion	750
Choked disc	730
Choroid	
affections not listed in classification	680
affections not specified*	690
arteriosclerotic disease of	670
atrophy of	610
coloboma of	146
sarcoma of	680
Choroiditis	
myopic (or with myopia) (*see p. 10*)	121
other	610
Chorioretinitis	
myopic (or with myopia) (*see p. 10*)	121
other	630
Coloboma	
at birth (any part of eye)	146
surgical coloboma of iris* (*see pp. 4, 11*)	—

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Conjunctivitis* (*see also* keratoconjunctivitis) (*see p. 10*)	
with perforation of cornea	330
Contusion of	
cornea	380
eyeball	180
Cornea	
abrasion of	380
abscess of	330
affections not listed in classification	380
affections not specified	390
burns of (including chemical)	380
conical	
congenital (*see pp. 10-11*)	148
other	380
contusion of	380
degeneration due to physical agents	380
ectasia of, *see* Keratectasia	—
injuries of	380
hypopyon ulcer of	430
leukoma of* (*see p. 11*)	310 to 390
macula of* (*see p. 11*)	310 to 390
opacities of* (*see p. 11*)	310 to 390
scars of* (*see p. 11*)	310 to 390
staphyloma of* (*see p. 11*)	310 to 390
ulcers of	330
pannus	350
vascularization of	350
vascularization and ulceration of	360
Cyclitis	420
Defect, developmental or congenital, *see* Structural anomaly	—
Ectropion* (*see p. 10*)	—
Endophthalmitis	130
Embolism of central artery or vein	680
Entropion* (*see p. 10*)	—
Enucleation* (classify by primary eye lesion, if known; *see p. 11*)	190
Evisceration* (classify by primary eye lesion, if known; *see p. 11*)	190
Exophthalmos*	180
Eyeball (*see* specific affection or anomaly, if known)	
abrasion of	180
affections not listed in classification	180
affections not specified*	190
atrophic* (*see p. 11*)	151
avulsion of* (*see p. 11*)	190
degenerative changes	
due to physical agents	180
not listed in classification	158
not specified*	190
disorganized* (*see p. 11*)	151
enucleated* (classify by primary eye lesion, if known; *see p. 11*)	190
eviscerated* (classify by primary eye lesion, if known; *see p. 11*)	190
phthisic* (classify by primary eye lesion, if known; *see p. 11*)	151
rudimentary	142
Foreign bodies in	
cornea	380
eye	180
Glaucoma	
adult type	110
congenital (*see p. 10*)	143
juvenile	110
infantile (*see p. 10*)	143
secondary (*see p. 4*)	—
Glioma	
pseudo	420
retinal	680
Globe, *see* Eyeball	—
Hemorrhage	
intra-ocular (classify by primary eye condition, if known)	800
retinal	650
subhyaloid	650
Hole in macula (*see p. 10*)	
senile	660
traumatic	680
Hyalitis* (classify by primary eye condition, if known; *see pp. 4, 11*)	800

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Hydrophthalmos	143
Hyperopia (*see p. 10*)	128
with astigmatism	128
Hypertension, *see* Glaucoma	—
Hyphemia* (classify by primary eye condition, if known; *see pp. 4, 11*)	—
Hypopyon	
keratitis	430
ulcer	430
Irideremia	145
Iridochoroiditis	420
Iridocyclitis	420
Iris	
affections not listed in classification	480
affections not specified	490
atrophy of* (*see p. 11*)	410
bombe* (*see p. 11*)	410
coloboma of	
at birth (*see p. 10*)	146
surgical*	—
Iritis	
sympathetic (*see p. 10*)	440
other	410
Keratectasia* (*see p. 10*)	
at birth	148
other	380
Keratitis	
eczematous	320
interstitial	310
parenchymatous	310
phlyctenular	320
profunda	310
punctata	420
ulcerative	330
vasculo nebulous	350
xerotic	380
type not specified	340
Keratocele	380
Keratoconjunctivitis	
with perforation of cornea (*see p. 10*)	330
type not specified*	340
Keratoconus	
at birth (*see p. 10*)	148
other	380
Keratoglobus	
with hypertension	143
without hypertension	148
Kerato-iritis	430
Keratomalacia	380
Lacrimal glands—any affection of* (*see p. 10*)	—
Leber's disease	710
Lens	
affections not listed in classification	580
affections not specified*	590
degeneration of	510
dislocated	520
ectopic	520
luxation of	520
opacity of	510
subluxation of	520
Leukoma* (*see p. 11*)	310 to 390
adherent	430
Lids—any affection of* (*see p. 10*)	—
Macula*	
corneal* (*see p. 11*)	310 to 390
hole in the	
senile	660
traumatic	680
senile degeneration of	660
Megalocornea	
with hypertension	143
without hypertension	148
Megalophthalmos	143
Microcornea	148
Microphthalmos	144
Motor anomalies (muscular defects)* (*see p. 10*)	—
Myopia	
malignant	121
progressive	121
with astigmatism	121
with pathological conditions	121

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Myopic	
choroiditis (*see p. 10*)	121
crescent (*see p. 10*)	121
Near-sightedness*	121
Neuritis	
intra-ocular	720
retrobulbar	750
Neuroretinitis	740
Nystagmus* (*see p. 11*)	—
Opacities* (*see p. 11*)	
corneal—primary eye condition unknown	390
lens	510
vitreous, primary eye condition unknown	800
Ophthalmitis* (*see pp. 10-11*)	
metastatic	420
scrofulous	320
sympathetic (*see p. 10*)	440
Optic nerve	
affections not listed in classification	780
affections not specified	790
atrophy of (*see p. 11*)	
primary	710
secondary* (*see p. 11*)	—
choroidal atrophy of	610
postneuritic atrophy of	720
postpapillitic atrophy of	720
retinal atrophy of	620
retrobulbar lesion of (including brain lesions)	750
Optic atrophy	
primary	710
secondary* (*see p. 11*)	—
Optic neuritis	
descending	720
intra-ocular	720
retrobulbar	750
Orbit, any affection of* (*see p. 10*)	—
Pannus	350
Panophthalmitis	130
Papilledema	730
Papillitis	720
Perforating	
ulcer (of cornea)	330
wound of cornea	380
wound of eyeball	180
Phlyctenular ulcer	320
Phthisis bulbi* (*see p. 11*)	151
Presbyopia* (*see pp. 10, 11*)	—
Prosthesis* (classify by primary eye lesion, if known; *see p. 11*)	190
Pseudo-glioma	420
Pterygium	380
Ptosis* (*see p. 10*)	—
Pupil	
exclusion of* (*see p. 11*)	410
occlusion of* (*see p. 11*)	410
seclusion of* (*see p. 11*)	410
Refractive error, type not specified*	129
Retina	
affections not listed in classification	680
affections not specified*	690
arteriosclerotic disease of	670
atrophy of	620
degeneration of	660
detached	640
embolism of artery	680
glioma of	680
hemorrhage of	650
thrombosis of artery	680
undeveloped	148
Retinitis	
hemorrhagic	650
pigmentosa	660
punctata	660
proliferans	650
type not specified	620
Retinochoroiditis	630
Retrobulbar	
lesion	750
neuritis	750
Rudimentary eyeball	142

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Sarcoma of choroid	680
Scleral staphyloma* (*see p. 10*)	121
Scleritis* (*see p. 10*)	—
Siderosis bulbi	180
Staphyloma* (*see p. 11*)	
anterior*	310 to 390
corneal	310 to 390
posterior*	121
scleral*	121
Strabismus* (*see p. 11*)	—
Structural anomaly (*see* specific item, if known)	
anomaly not listed in classification	148
anomaly, type not specified*	149
multiple anomalies	147
Sympathetic (*see p. 10*)	
inflammation	440
iridocyclitis	440
ophthalmitis	440
uveitis	440
Synchysis* (classify by primary eye condition, if known)	800
Synechia* (*see p. 11*)	
anterior*	430
posterior*	410

* Indicates that the term is either unusual as a cause of blindness or unacceptable terminology.

	CODE NO.
Thrombosis of	
central artery or vein	680
Trichiasis* (*see p. 10*)	—
Tumor (classify by part of eye affected)	
intra-ocular, not otherwise specified	158
brain, not otherwise specified	750
Uveitis	
metastatic	420
sympathetic (*see p. 10*)	440
Vitreous	
abscess of*	420
fluid* (classify by primary eye condition, if known)	800
foreign body in	180
hemorrhage in* (classify by primary eye condition, if known)	800
opacities of* (classify by primary eye condition, if known)	800
Wound of	
cornea	380
eyeball	180
Xerosis	380
Xerophthalmia	380

SUPPLEMENTARY TABULATIONS

TABULATION BY PRESENT AGE AND BY AGE AT ONSET OF BLINDNESS

Before drawing conclusions from any statistical data on causes of blindness, consideration must be given to the ages of the persons represented. This is important, since the relative frequency of certain causes will depend largely upon the age composition of the group.

In making basic classifications by age, it is desirable to use small age intervals of equal size. These can be combined into significant larger groupings as needed for particular comparisons. The adoption of five-year age categories (with some subdivision of the group "Under 5 years") is recommended.

If approximate accuracy is sufficient, it will be found convenient to tabulate ages as of December 31 of the year in which the study is made. If this is done, the last two digits in the year of birth can be readily converted into age. For example, all persons born in 1902 would be 38 years of age as of Dec. 31, 1940.

For calculations of the incidence of blindness at various ages and the relative importance of different causes at each age, data on age at onset of blindness must be used. "Age at onset of blindness" is to be interpreted as meaning *the age at which the individual acquired a visual handicap of sufficient degree to warrant his being classified as a blind person according to the accepted definition of blindness.* Unfortunately, it is often difficult to obtain definite information on this point. Thus, a blind person may not actually know whether his blindness occurred before birth or in infancy; or he may have considered himself blind only when the blindness became total. Moreover, with the best of intentions, unless the question concerning onset of blindness is asked with great care, the blind person may state the number of years he has been blind rather than his age at onset of blindness. For these and other reasons, it is important that the information concerning age at onset given on the eye record be edited and, if necessary, rechecked before tabulation. Even then the conclusions drawn from the data should be guarded. Nevertheless, since such information will be useful if and when it can be had, an attempt should be made to obtain it.

Where blindness in both eyes did not occur at the same time, the item to be tabulated is the age at onset of blindness in the *second* eye.

The categories suggested for use in both of the above-mentioned age tabulations are:

RECOMMENDED AGE CLASSIFICATION

Under 5 years
- Before birth[1]
- During birth to but not including 1 year
- 1 year to but not including 5 years

5 to but not including 10 years
10 to but not including 15 years
15 to but not including 20 years
20 to but not including 25 years
25 to but not including 30 years
30 to but not including 35 years
35 to but not including 40 years
40 to but not including 45 years
45 to but not including 50 years
50 to but not including 55 years
55 to but not including 60 years
60 to but not including 65 years
65 to but not including 70 years
70 to but not including 75 years
75 to but not including 80 years
80 years and over
Not reported
Not blind

[1] This category is needed only for tabulations of "age at onset of blindness." So far as it is possible to do so, this group should be reserved for cases in which blindness, as opposed to the eye condition which eventually led to blindness, existed at birth.

TABULATION BY DEGREE OF VISION REMAINING

Even if a uniform definition of blindness were in use in all states (which is not true at the present time), it would still be desirable for some purposes to subdivide the blind group by degree of vision remaining. By correlation with data on causes of blindness, it is possible to discover which causes are responsible for the greatest degree of visual handicap. Moreover, it is necessary to take into consideration the amount of vision remaining in planning vocational training and other welfare programs for blind persons.

In tabulations by amount of vision remaining, individuals should be classified by degree of vision in the better eye after correction with ordinary lenses, if worn.

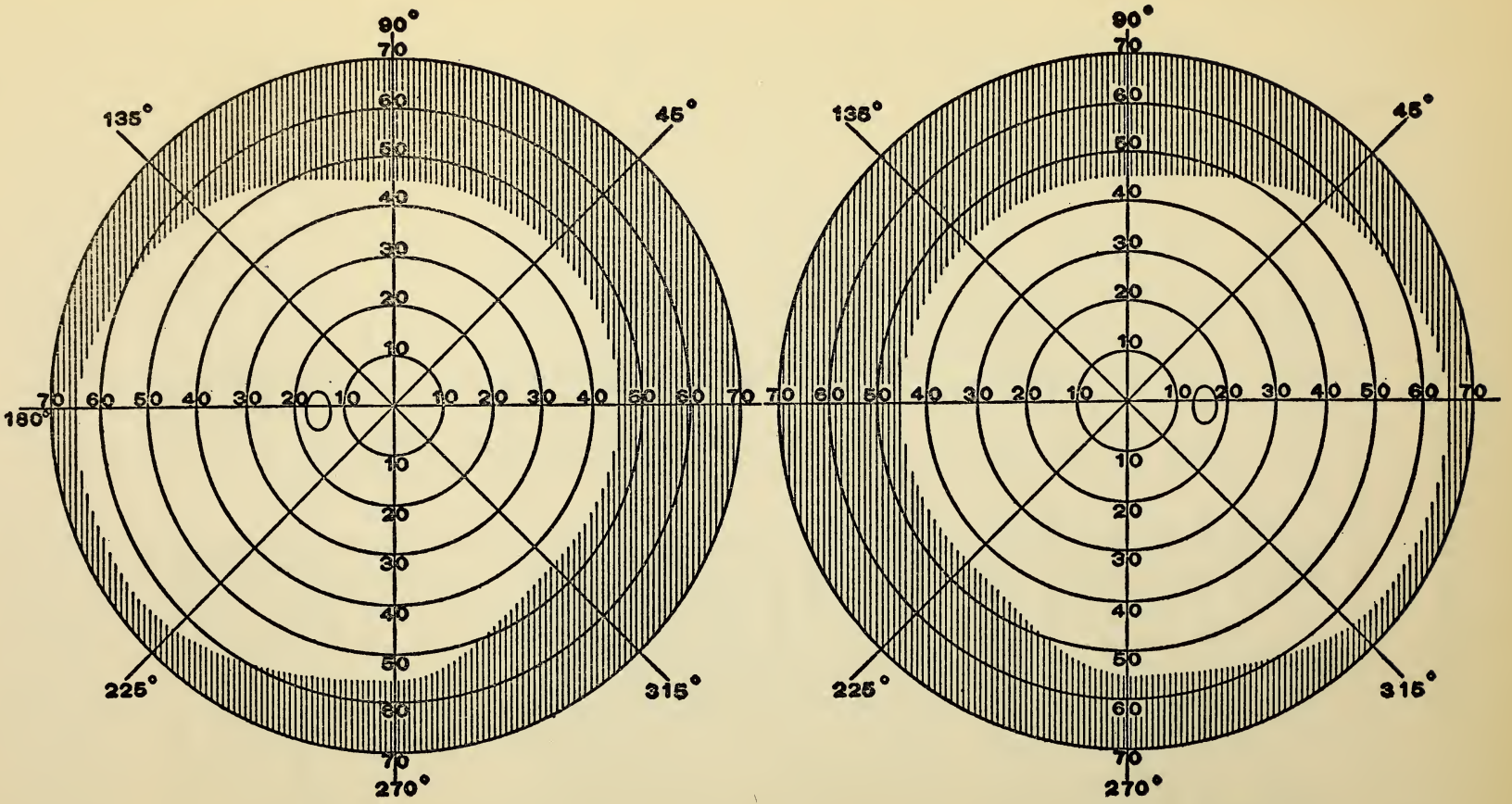
It should be noted that the use of indefinite measurements of central visual acuity, such as finger counting, is not generally approved. However, for the guidance of statisticians, directions for classifying indefinitely specified cases are suggested. (E.g., for purpose of classification, "counts fingers at 3 feet, or 1 meter," is assumed to be approximately equivalent to 5/200 Snellen, while "counts fingers at 10 feet" is assumed to be approximately equivalent to 10/200.)

Suggested Grouping By Degree of Vision Remaining

CODE NO.	
10	Absolute blindness.
11	Light perception (and/or projection) only.
12	Motion perception and form perception up to but not including 5/200 (or up to but not including "Counts fingers at three feet").
13	5/200 up to but not including 10/200 (or "Counts fingers at three feet but not ten feet").
14	10/200 up to but not including 20/200.
15	20/200.
	Better than 20/200 but having limited peripheral vision.
16	Peripheral vision limited to 20° or less in the widest diameter.
17	Peripheral vision limited, but greater than 20°.
18	Peripheral vision limited, amount of limitation not known.
20	Better than 20/200 up to and including 20/70 and no limitation of peripheral vision.
21	Better than 20/70 and no limitation of peripheral vision.
99	Vision not reported.

PERIPHERAL VISION

In the classification of blind persons by amount of vision remaining, it is not necessary to give consideration to the limitation of peripheral vision unless an individual has central visual acuity better than 20/200 Snellen. For this group of cases the size of the useful field of vision should be stated definitely by the examiner. The latter may note the measurement (in angular degrees) of the widest diameter of the visual field of each eye, or he may submit charts on which the sizes and shapes of the visual fields are plotted. (*See* p. 24.)



Courtesy of the American Medical Association

To judge the size of the peripheral field remaining, one must find the diameter which crosses the widest portion of the visual field and note whether it measures 20° or less. The limits of a useful field of 20° diameter may be symmetrical (i.e., both extremities of the widest diameter may reach to the 10° circle) or it may be irregular (e.g., 5° below line of vision and 15° above it).

TABULATION BY RACE AND COLOR

Since the prevalence of some types of blindness is believed to be higher among Negroes and Indians than among whites, it is desirable that classifications of blind persons by race and color be made routinely. It is recommended that for these purposes the tabulations regularly show at least the groups, white, Negro, Indian, and "all other," separately. The group "all other" might be further divided wherever particular other races assume numerical importance. The races for which data have been compiled by the United States Bureau of the Census are:

01	White
02	Negro
03	Indian
04	Chinese
05	Japanese
06	Filipino
07	Hindu
08	Korean
09	Hawaiian
10	Malay
11	Siamese
12	Samoan
13	All other
99	Unknown

Classification of causes of blindness by racial groups may be too laborious to be routinely desirable, but for some of the more frequently occurring causes, such as trachoma, syphilis, etc., tabulations by race could be made readily and would be of much significance. Moreover, the significance of racial differences can be studied to better advantage if the tabulations for several states have been compiled so that the data can be combined.

In order that the race and color classifications shall be strictly comparable from state to state, it is important that standard definitions be followed in making this classification. For this purpose the following definitions based on the United States Bureau of the Census rules are suggested:

Mexicans* — All Mexicans, including those born in Mexico or having parents born in Mexico, who are not definitely Indian, Negro, Chinese or Japanese, should be classified as white.

Mixed white and Negro—A person of mixed white and Negro blood is to be classified as a Negro, no matter how small the percentage of Negro blood. Both black and mulatto persons are to be classified as Negro without distinction.

Mixed Indian and Negro—A person of Indian and Negro blood should be classified as Negro, unless the Indian blood very definitely predominates and the status as an Indian is generally accepted in the community.

Mixed white and Indian—A person of mixed white and Indian blood should be classified as Indian, except where the percentage of Indian blood is very small or where he is regarded as a white person by those in the community where he lives.

Mixed white and non-white—In general any mixture of white and non-white should be classified according to the non-white parent.

Mixtures of non-white races—Mixtures of non-white races should be classified according to the race of the father, except Negro-Indian.

* States having a sufficiently large Mexican population to warrant separate tabulation may accomplish this purpose, and at the same time maintain comparability with data from other states, by making use of three additional groupings: "Mexican, white;" "Mexican, Negro;" and "Mexican, Indian."

PHYSICIAN'S REPORT ON EYE EXAMINATION

Patient's name _____ Sex _____ Race _____

Address _____
(Street and number) (Municipality) (County) (State)

Date of birth _____ Age at onset of blindness: Right eye _____ Left eye _____

DIAGNOSIS: (If primary eye condition or etiological factor is not the same for both eyes, divide space and indicate each separately.)

Eye condition primarily responsible for blindness _____

_____

Secondary conditions if any _____

_____

Etiological factor responsible for primary eye condition _____

If there is a history of eye injury, state nature, date, and circumstances _____

_____

CENTRAL VISION:		WITHOUT GLASSES		WITH GLASSES	
		Distance (20 feet)	*Near (14 inches)*	*Distance (20 feet)*	*Near (14 inches)*
Use Snellen notations in recording vision:—20/200, 10/200, 14/140, 14/280, etc.	Right eye	_____	_____	_____	_____
	Left eye	_____	_____	_____	_____

PERIPHERAL VISION:

Attach field chart if available, noting radius of perimeter, size of test object, and illumination.

Is there any limitation in the field of vision? Right eye _____ Left eye _____

If so, what is widest diameter (in degrees) of remaining visual field? Right eye _____ Left eye _____

PROGNOSIS AND RECOMMENDATIONS:

Prognosis _____

Is there any likelihood that vision could be improved by operation or treatment? _____

Recommendations—Primary eye condition _____

Recommendations—Etiological condition _____

When should patient be re-examined? _____

Remarks _____

_____

_____

Date of examination _____ _____
(Signature of eye physician)

Date of report _____ _____
(Address)

Use reverse side for recording re-examinations, operations, treatment, etc.

Form prepared and published by the Committee on Statistics of the Blind. Order from the Office of the Secretary, 15 West 16th Street, New York
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